TiBS
trends in BIOCHEMICAL SCIENCES
is an official publication of the INTERNATIONAL UNION OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

Author Index

Subject Index

Index of Books Reviewed

1995

Vol. 20
Issues 1–12

ISSN 0968 0004

Trends in Biochemical Sciences

Elsevier Trends Journals
68 Hills Road
Cambridge
UK CB2 1LA
Tel +44 1223 315961
Fax +44 1223 464430
Email: tibs@elsevier.co.uk

EDITORIAL BOARD

Tim Hunt (editor-in-chief), Herts, UK
M. Buckingham, Paris, France
A. R. Fersht, Cambridge, UK
M-J. Gething, Melbourne University, Australia
N. Heintz, New York, USA
C-H. Heldin, Uppsala, Sweden
W. Junge, Osnabrück, Germany
R. Kornberg, Stanford, USA
A. Lamond, Heidelberg, Germany
P. Schimmel, Cambridge, USA
P. Srere, Dallas, USA
P. H. von Hippel, Eugene, USA
J. Witkowski, New York, USA
M. Yanagida, Kyoto, Japan

EDITOR — Jo McEntyre

Assistant Editors — Catherine Brooksbank and Mark Swallow

Editorial Administrator — Christine Oliver

Publisher — Peter Desmond

Copyright © 1996 Elsevier Science Ltd. All rights reserved.

This journal and the individual contributions contained in it are protected by the copyright of Elsevier Science Ltd. Except as outlined in the terms and conditions, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher, Elsevier Trends Journals, 68 Hills Road, Cambridge UK CB2 1LA.

Back Issues of Elsevier Trends Journals

Back issues from 1994 and 1995 are available to our customers at the following rates. Please state which issue(s) and quantity you require, including the volume and number (or year and month).

Issues(s): _____

_____

_____

Please tick how many copies you would like below. Back issues are available in bulk at discounted rates – institutions/libraries must pay institutional rates.

Individual Rates

- ❑ Single copy £18.00/$29.00 each
- ❑ Five copies £76.50/$123.25 (includes 15% discount)
- ❑ Ten copies £135.00/$217.50 (includes 25% discount)

Institutional Rates

- ❑ Single copy £40.00/$64.00 each
- ❑ Five copies £170.00/$272.00 (includes 15% discount)
- ❑ Ten copies £300.00/$480.00 (includes 25% discount)

*Hardbound compendia of previous volumes are available to institutional subscribers. Please ask for further details.

PAYMENT METHOD:

- ❑ Personal cheque, Eurocheque, or money order made payable to **Elsevier**
- ❑ Credit card
  - ❑ Visa ❑ Mastercard ❑ American Express

Card no: _____

Expiry date: _____

Name on card: _____ Signature: _____

Total Payment sent: _____

Name: _____

Position: _____

Address: _____

_____

_____

Zip/Post Code: _____

Country: _____

Telephone: _____ Fax: _____

Please send this order with payment to:

Elsevier Trends Journals, Oxford Fulfilment Centre, PO Box 800, Kidlington, Oxford, UK OX5 1DX.
Tel: +44 1865 843300; Fax: +44 1865 843940

Elsevier Trends Journals, 660 White Plains Road, Tarrytown, NY 10591-5153, USA.
Tel: +1 (914) 524 9200; Fax: +1 (914) 333 2444. e-mail: journals@elsevier.co.uk

AUTHOR INDEX

Abbreviations: (BR), Book Review; (CC), Computer Corner; (L), Letter to the Editor; (O), Obituary; (PSM), Protein Sequence Motif; (R), Reflections

A

Aasland, R., Gibson, T.J. and Stewart, A.F., The PHD finger: implications for chromatin-mediated transcriptional regulation (PSM) 56
Adams, S.R., see Cubitt, A.B. 448
Aderem, A., see McLaughlin, S. (PSM) 272
Agarwal, M.L., see Chernova, O.B. 431
Aitken, A., 14-3-3 proteins on the MAP 95
Allen, J.B., Walberg, M.W., Edwards, M.C. and Elledge, S.J., Finding prospective partners in the library: the two-hybrid system and phage display find a match 511
Argos, P., see Milpetz, F. (CC) 204
Ashman, K. and Mann, M., Techniques in Protein Chemistry VI (BR) 528
Attwood, T.K., see Flower, D.R. (L) 498
Avis, J., see Nagai, K. 235

B

Bachellerie, J-P., Michot, B., Nicoloso, M., Balakin, A., Ni, J. and Fournier, M.J., Antisense snoRNAs: a family of nucleolar RNAs with long complementarities to rRNA 261 (also see Erratum 485)
Balakin, A., see Bachellerie, J-P. 261
Bates, P.A., see Sternberg, M. (BR) 129
Battey, J., The G-Protein Linked Receptor Facts Book (BR) 91
Bazemore, L.R., see Rao, B.J. 109
Beamish, H., see Lavin, M.F. 382
Beck, M.E., see Flower, D.R. (L) 498
Bjoras, M., see Seeberg, E. 391
Blake, D.J., Tinsley, J.M., Davies, K.E., Knight, A.E., Winder, S.J. and Kendrick-Jones, J., Coiled-coil regions in the carboxy-terminal domains of dystrophin and related proteins: potentials for protein–protein interactions 133
Bode, W., see Stubbs, M.T. 23
Boguski, M.S., The turning point in genome research 295
Boldin, M., see Feinstein, E. (L) 342
Bolwell, G.P., Cyclic AMP, the reluctant messenger in plants 492
Boman, A.L. and Kahn, R.A., Arf proteins: the membrane traffic police? 147
Bork, P., Ouzounis, C. and McEntyre, J., Ready for a motif submission? A proposed checklist 104
Bos, J. L., see Burgering, B.M.T. 18
Bos, J.L., A target for phosphoinositide 3-kinase: Akt/PKB 441
Boyd, A.E., see Cubitt, A.B. 448
Braun, H-P. and Schmitz, U.K., Are the 'core' proteins of the mitochondrial bc_1 complex evolutionary relics of a processing protease? 171
Bray, D., Biochemistry (BR) 211
Breimer, D.D., see Breimer, L. 175
Breimer, L. and Breimer, D.D., A computer-based international 'Thesis-line'? 175
Bru, R., see Sanchez Ferrer, A. (CC) 286
Bucher, P., see Hofmann, K. (L) 347
Buckingham, A.D., NMR of proteins (BR) 168
Buckley, J.T., see Upton, C. (PSM) 178
Bune, A., Invasion of the cabbage patch (L) 16
Burgering, B.M.T. and Bos, J.L., Regulation of Ras-mediated signalling: more than one way to skin a cat 18
Burns, J., Fell, D., Heinrich, R., Mazat, J-P., Small, R. and Westerhoff, H., Henrik Kacser, 1918–1995 (O) 297

C

Campbell, P.N., Alexander A. Bayev, 1904 to 1994: an appreciation (O) 259
Campbell, P.N., Biochemistry (2nd edn) (BR) 330
Campbell, P.N., Invasion of the cabbage patch (L) 16
Cano, E. and Mahadevan, L.C., Parallel signal processing among mammalian MAPKs 117
Cantley, L.C., see Songyang, Z. 470
Carafoli, E., see James, P. 38
Casero Jr, R.A., Cancer Researcher Progression Model 302
Cashmore, A.R., see Menkens, A.E. 506
Castresana, J. and Saraste, M., Evolution of energetic metabolism: the respiration-early hypothesis 443
Chauvaux, S., see Saier, M.H. (PSM) 267
Chen, C-Y.A. and Shyu, A-B., AU-Rich elements: characterization and importance in mRNA degradation 465
Chen, J-J. and London, I.M., Regulation of protein synthesis by heme-regulated eIF-2α kinase 105
Chen, J.Y., Reinvasion of the cabbage patch (L) 224
Chernov, M.V., see Chernova, O.B. 431
Chernova, O.B., Chernov, M.V., Agarwal, M.L., Taylor, W.R. and Stark, G.R., The role of p53 in regulating genomic stability when DNA and RNA synthesis are inhibited 431
Chiu, S-K., see Rao, B.J. 109
Cockerill, M., see Gibbs, R.A. (CC) 162
Cockerill, M., Upgrade blues (CC) 247
Collins, J.E. and Fleming, T.P., Epithelial differentiation in the mouse preimplantation embryo: making adhesive cell contacts for the first time 307
Condeelis, J., Elongation factor 1α, translation and the cytoskeleton 169
Cooper, A.A. and Stevens, T.H., Protein splicing: self-splicing of genetically mobile elements at the protein level 351
Cubitt, A.B., Heim, R., Adams, S.R., Boyd, A.E., Gross, L.A. and Tsien, R.Y., Understanding, improving and using green fluorescent proteins 448

D

Davies, K.E., see Blake, D.J. 133
Deutscher, J., see Saier, M.H. (PSM) 267
Dillin, A. and Rine, J., On the origin of a silencer 231
Doetsch, P.W., What's old is new: an alternative DNA excision repair pathway 384
Downward, J., The Oncogene FactsBook (BR) 486

E

Eddy, S., The Human Genome Project: Deciphering the Blueprint of Heredity (BR) 91
Edwards, M.C., see Allen, J.B. 511
Edwards, S.W., Cell signalling via integrins and immunoglobulin receptors in primed neutrophils 362
Eide, L., see Seeberg, E. 391
Elledge, S.J., see Allen, J.B. 511
Enoch, T. and Norbury, C., Cellular responses to DNA damage: cell-cycle checkpoints, apoptosis and the roles of p53 and ATM 426
Evans, P., see Nagai, K. 235

F

Feinstein, E., Wallach, D., Boldin, M., Varfolomeev, E. and Kimchi, A., The death domain: a module shared by proteins with diverse cellular functions (L) 342
Fell, D., see Burns, J. 297
Fiedler, K. and Simons, K., Annexin homologues in *Giardia lamblia* (L) 177
Fleming, T.P., see Collins, J.E. 307
Flower, D.R., Sansom, C.E., Beck, M.E. and Attwood, T.K., The first prokaryotic lipocalins (L) 498
Forsén, S. and Linse, S., Cooperativity: Over the Hill 495
Fournier, M.J., see Bachellerie, J-P. 261
Friedberg, E.C., Out of the shadows and into the light: the emergence of DNA repair 381
Friedland, R.P., Invasion of the cabbage patch (L) 16
Friends and colleagues of Alton Meister, Alton Meister, 1922–1995 (O) 335

G

George, G.N., see Prince, R. 217
Gibbs, R.A. and Cockerill, M., Sequencher for the Macintosh (CC) 162
Gibson, T.J., see Aasland, R. (PSM) 56
Glick, B.S., see Lithgow, T. 98
Grimstone, A.V., Molecular Biology of the Cell (3rd edn) (BR) 210
Gross, L.A., see Cubitt, A.B. 448
Guarente, L., Transcriptional coactivators in yeast and beyond 517

H

Hahn, M., see Heinemann, U. (L) 349
Halperin, M.L., Biochemistry for the Medical Sciences: An Integrated Case Approach (BR) 48
Hannun, Y.A. and Obeid, L.M., Ceramide: an intracellular signal for apoptosis 73
Hardie, G., Invasion of the cabbage patch (L) 16
Hardie, G., Protein Kinases (BR) 253
Hardy, S.J.S., see Randall, L.L. 65
Hazeki, K., see Ui, M. 303
Hazeki, O., see Ui, M. 303
Heim, R., see Cubitt, A.B. 448
Heinemann, U. and Hahn, M., Circular permutations of protein sequence: not so rare? (L) 349
Heinrich, R., see Burns, J. 297
Hengen, P.N., DNA Sequencing: the Basics (BR) 250
Hengen, P.N., Methods and reagents – Agarose gel electrophoresis in your kitchen (CC) 202
Hengen, P.N., Methods and reagents – Caring for your hybridization membranes (CC) 160
Hengen, P.N., Methods and reagents – Cloning PCR products using T-vectors (CC) 85
Hengen, P.N., Methods and reagents – Electro-transformation of *Escherichia coli* with plasmid DNA (CC) 248
Hengen, P.N., Methods and reagents – Fidelity of DNA polymerases for PCR (CC) 324
Hengen, P.N., Methods and reagents – Floaties in the gene pool (CC) 522
Hengen, P.N., Methods and reagents – Purification of His-Tag fusion proteins from *Escherichia coli* (CC) 285
Hengen, P.N., Methods and reagents – Quantitative PCR: an accurate measure of mRNA? (CC) 476
Hengen, P.N., Methods and reagents – Reamplification of PCR fragments 124
Hengen, P.N., Methods and reagents – Vectorette, splinkerette and boomerang DNA amplification (CC) 372
Hengen, P.N., Methods and reagents – Wayward PCR primers (CC) 42
Hieter, P., see Lamb, J.R. 257
Hirano, T., Biochemical and genetic dissection of mitotic chromosome condensation 357
Hofmann, K. and Bucher, P., The FHA-domain: a putative nuclear signalling domain found in protein kinases and transcription factors (L) 347
Hohmann, S., see Thevelein, J.M. 3
Holm, L. and Sander, C., Dali: network tool for protein structure comparison (CC) 478
Holm, L. and Sander, C., DNA polymerase β belongs to an ancient nucleotidyltransferase superfamily (L) 345
Hooper, N.M. and Turner, A.J., Specificity of the Alzheimer's amyloid precursor protein α-secretase (L) 15
Horn, R., Invasion of the cabbage patch (L) 16
Howe, L.R. and Weiss, A., Multiple kinases mediate T-cell receptor signalling 59
Hughes, J.M.X., RNA Isolation and Analysis (BR) 251

I

Inglese, J., Koch, W.J., Touhara, K. and Lefkowitz, R.J., $G_{\beta\gamma}$ interactions with PH domains and Ras–MAPK signaling pathways 151
Ito, N., see Nagai, K. 235

J

Jackson, S.P. and Jeggo, P.A., DNA double-strand break repair and V(D)J recombination: involvement of DNA-PK 412
James, P., Vorherr, T. and Carafoli, E., Calmodulin-binding domains: just two faced or multi-faceted? 38
Jeffares, D.C., Poole, A.M. and Penny, D., Pre-rRNA processing and the path from the RNA world (L) 298
Jeggo, P.A., see Jackson, S.P. 412
Johnston, L.H., see Toyn, J.H. 70
Jones, K.M., see Stansfield, I. 489

K

Kahn, R.A., see Boman, A.L. 147
Keith, W.N., Somatic Cell Hybrids (BR) 331
Kendrick-Jones, J., see Blake, D.J. 133
Kennedy, M.B., Origin of PDZ (DHR, GLGF) domains (L) 350
Khanna, K.K., see Lavin, M.F. 382
Kholodenko, B.N. and Westerhoff, H.V., The macroworld versus the microworld of biochemical regulation and control 52
Kimchi, A., see Feinstein, E. (L) 342
Kinoshita, T., see Takeda, J. 367
Klungland, A., see Lindahl, T. 405
Knight, A.E., see Blake, D.J. 133
Koch, W.J., see Inglese, J. 151
Koleske, A.J. and Young, R.A., The RNA polymerase II holoenzyme and its implications for gene regulation 113
Kollmus, H., see McCarthy, J.E.G. 191
Kolodner, R.D., Mismatch repair: mechanisms and relationship to cancer susceptibility 397
Koonin, E.V., A protein splice-junction motif in hedgehog family proteins (PSM) 141
Koonin, E.V. and van der Vies, S.M., Conserved sequence motifs in bacterial and bacteriophage chaperonins (PSM) 14
Koonin, E.V., see Rudd, K.E. (PSM) 12
Kristofferson, D. and McEntyre, J., Stop press: TIBS newsgroup (CC) 44
Kumar, S., ICE-like proteases in apoptosis 198
Kyrpides, N.C. and Ouzounis, C.A., The eubacterial trancriptional activator Lrp is present in the Archaeon *Pyrococcus furiosus* (PSM) 140

L

Lamb, J.R., Tugendreich, S. and Hieter, P., Tetratrico peptide repeat interactions: to TPR or not to TPR? 257
Landsman, D. and Wolffe, A.P., Common sequence and structural features in the heat-shock factor and Ets families of DNA-binding domains (PSM) 225
Langowski, J., see Rippe, K. 500
Lankenau, D-H., Molecular Biology Intelligence Unit: *Drosophila* Retrotransposons (BR) 487
Latchman, D., Biochemistry (4th edn) (BR) 488
Lavin, M.F., Khanna, K.K., Beamish, H., Spring, K., Watters, D. and Shiloh, Y., Relationship of the ataxia-telanglectasia protein ATM to phosphoinositide 3-kinase 382
Lazar, S., see Rudd, K.E. (PSM) 12
Lefkowitz, R.J., see Inglese, J. 151
Lehmann, A.R., Nucleotide excision repair and the link with transcription 402
Lennarz, W.J., see Ohlendieck, K. 29
Lew, J. and Wang, J.H., Neuronal cdc2-like kinase 33

Lindahl, T., Satoh, M.S., Poirier, G.G. and Klungland, A., Post-translational modification of poly(ADP-ribose) polymerase induced by DNA strand breaks 405
Linse, S., see Forsén, S. 495
Lippard, S.J., see Zamble, D.B. 435
Lithgow, T., Glick, B.S. and Schatz, G., The protein import receptor of mitochondria 98
London, I.M., see Chen, J-J. 105
Lucy, J.A., Biological Membranes: Structure, Biogenesis and Dynamics (BR) 129

M

Maden, B.E.H., No soup for starters? Autotrophy and the origins of metabolism 337
Magee, A.I., see Milligan, G. 181
Mahadevan, L.C., see Cano, E. 117
Maller, J.L., Maturation-promoting factor in the early days (R) 524
Manchester, K.L., Did a tragic accident delay the discovery of the double helical structure of DNA? (R) 126
Mann, M. and Wilm, M., Electrospray mass spectrometry for protein characterization 219
Mann, M., see Ashman, K. (BR) 528
Mazat, J-P., see Burns, J. 297
McCarthy, J.E.G. and Kollmus, H., Cytoplasmic mRNA-protein interactions in eukaryotic gene expression 191
McClung, R., Plant Growth and Development: a Molecular Approach (BR) 212
McEntyre, J., see Bork, P. 104
McEntyre, J., see Kristofferson, D. (CC) 44
McLaughlin, S. and Aderem, A., The myristoyl-electrostatic switch: a modulator of reversible protein–membrane interactions (PSM) 272
Menkens, A.E., Schindler, U. and Cashmore, A.R., The G-box: a ubiquitous regulatory DNA element in plants bound by the GBF family of bZIP proteins 506
Michell, R.H., Early steps along the road to inositol-lipid-based signalling (R) 326
Michot, B., see Bachellerie, J-P. 261
Milligan, G., Parenti, M. and Magee, A.I., The dynamic role of palmitoylation in signal transduction 181
Milner, J., Flexibility: the key to p53 function? 49
Milner-White, J., see Sayle, R. (CC) 374
Milpetz, F., Argos, P. and Persson, B., TMAP: a new email and WWW service for membrane-protein structural predictions (CC) 204
Moore, I., Schell, J. and Palme, K., Subclass-specific sequence motifs in Rab GTPases (PSM) 10
Morgan, B.A., see Toyn, J.H. 70
Morrissey, J.P. and Tollervey, D., Birth of the snoRNPs: the evolution of RNase MRP and the eukaryotic pre-rRNA-processing system 78
Morrissey, J.P. and Tollervey, D., Reply (L) 299
Mullersman, J.E. and Pfeffer, L.M., A novel cytoplasmic homology domain in interferon receptors (PSM) 55
Munro, S., Guidebook to the Secretory Pathway (BR) 93

N

Nagai, K., Oubridge, C., Ito, N., Avis, J. and Evans, P., The RNP domain: a sequence-specific RNA-binding domain involved in processing and transport of RNA 235
Nakanishi, H., see Takai, Y. 227
Ni, J., see Bachellerie, J-P. 261
Nicola, N.A., Dictionary of Cytokines (BR) 250
Nicoloso, M., see Bachellerie, J-P. 261
Norbury, C., see Enoch, T. 426
Núñez-Delicado, E., see Sánchez-Ferrer, A. (CC) 286

O

O'Dell, K., *Drosophila melanogaster*: Practical Uses in Cell and Molecular Biology Methods in Cell Biology (Vol. 44) (BR) 252
Obeid, L.M., see Hannun, Y.A. 73
Ogawa, T., see Shinohara, A. 387
Ohlendieck, K. and Lennarz, W.J., Role of the sea urchin egg receptor for sperm in gamete interactions 29
Okada, T., see Ui, M. 303
Olson, W.K. , see Yang, Y. 313
Op den Kamp, J.A.F. and Roelofsen, B., Molecular Membrane Biology 332
Oubridge, C., see Nagai, K. 235
Ouzounis, C., see Bork, P. 104
Ouzounis, C.A., see Kyrpides, N.C. (PSM) 140

P

Pace, N., Protein and Peptide Letters 215
Packman, L., Microcharacterization of Proteins (BR) 254
Palme, K., see Moore, I. (PSM) 10
Parenti, M., see Milligan, G. 181
Pawson, T., see van der Geer, P. (PSM) 277
Pearl, L.H. and Savva, R., DNA repair in three dimensions 421
Pedersen, P.L., see Thomas, P.J. 456
Pedersen, S.C., see Yang, Y. 313
Peitsch, M.C., Stampf, D.R., Wells, T.N.C and Sussman, J.L., The Swiss-3DImage collection and PDB-Browser on the World-Wide Web (CC) 82
Penny, D., see Jeffares, D.C. (L) 298
Persson, B., see Milpetz, F. (CC) 204
Peters, G., Oncogenes (2nd edn) (BR) 528
Peterson, C.L. and Tamkun, J.W., The SWI–SNF complex: a chromatin remodeling machine? 143
Pfeffer, L.M., see Mullersman, J.E. (PSM) 55
Phillips, C., see Ponting, C.P. (L) 102
Plunkett III, G., see Rudd, K.E. (PSM) 12
Poirier, G.G., see Lindahl, T. 405
Ponting, C.P. and Phillips, C., DHR domains in syntrophins, neuronal NO synthases and other intracellular proteins (L) 102
Ponting, C.P. and Russell, R.B., Swaposins: circular permutation within genes encoding saposin homologues (PSM) 179 (also see Errata 256)
Ponting, C.P., AF-6/cno: neither a kinesin nor a myosin, but a bit of both (PSM) 265
Poole, A.M., see Jeffares, D.C. (L) 298
Prince, R. and George, G.N., Cytochrome *f* revealed 217
Proud, C.G., PKR: a new name and new roles 241
Ptitsyn, O.B., How the molten globule become (R) 376 (also see Corrigendum 485)

Q

Qu, B-H., see Thomas, P.J. 456

R

Radding, C.M., see Rao, B.J. 109
Randall, L.L. and Hardy, S.J.S., High selectivity with low specificity: how SecB has solved the paradox of chaperone binding 65
Rao, B.J., Chiu, S-K., Bazemore, L.R., Reddy, G. and Radding, C.M., How specific is the first recognition step of homologous recombination? 109
Reddy, G., see Rao, B.J. 109
Regan, L., Protein design: novel metal-binding sites (PSM) 280
Reha-Krantz, L.J., Learning about DNA polymerase function by studying antimutator DNA polymerases 136
Reizer, J., see Saier, M.H. (PSM) 267
Rine, J., see Dillin, A. 231
Ripmaster, T., see Schimmel, P. 333
Rippe, K., von Hippel, P.H. and Langowski, J., Action at a distance: DNA-looping and initiation of transcription 500
Roca, J., The mechanisms of DNA topoisomerases 156
Roelofsen, B., see Op den Kamp, J.A.F. 332
Rouviere, P.E., see Rudd, K.E. (PSM) 12
Rudd, K.E., Plunkett III, G., Lazar, S., Sofia, H.J. Rouviere, P.E. and Koonin, E.V., A new family of peptidyl-prolyl isomerases (PSM) 12
Russell, R.B., see Ponting, C.P. (PSM) 179

S

Saier, M.H., Chauvaux, S., Deutscher, J., Reizer, J. and Ye, J-J., Protein phosphyorylation and the regulation of carbon metabolism in Gram-negative versus Gram-positive bacteria (PSM) 267
Salmond, G., Genetics of Bacterial Virulence (BR) 92
Salmond, G.P.C., The Encyclopedia of Molecular Biology (BR) 213

Sánchez-Ferrer, A., Núñez-Delicado, E. and Bru, R., Software for viewing biomolecules in three dimensions on the Internet (CC) 286
Sander, C., see Holm, L. (CC) 478
Sander, C., see Holm, L. (L) 345
Sansom, C.E., see Flower, D.R. (L) 498
Saraste, M., see Castresana, J. 443
Sasaki, T., see Takai, Y. 227
Satoh, M.S., see Lindahl, T. 405
Savva, R., see Pearl, L.H. 421
Sayle, R. and Milner-White, J., RASMOL: biomolecular graphics for all (CC) 374
Schatz, G., see Lithgow, T. 98
Schell, J., see Moore, I. (PSM) 10
Schimmel, P. and Ripmaster, T., Modular design of components of operational RNA code for alanine in evolution 333
Schimmel, P. and Schmidt, E., Making connections: RNA-dependent amino acid recognition 1
Schindler, U., see Menkens, A.E. 506
Schmidt, E., see Schimmel, P. 1
Schmitz, U.K., see Braun, H-P. 171
Schultz, R., Invasion of the cabbage patch (L) 16
Seeberg, E., Eide, L. and Bjoras, M., The base excision repair pathway 391
Segal, A.W., Biochemistry and Physiology of the Neutrophil (BR) 255
Shai, Y., Molecular recognition between membrane-spanning polypeptides 460
Sharrocks, A.D., see Shore, P. (BR) 292
Sherr, C.J., D-type cyclins 187
Shiloh, Y., see Lavin, M.F. 382
Shinohara, A. and Ogawa, T., Homologous recombination and the roles of double-strand breaks 387
Shore, P. and Sharrocks, A.D., Inducible Gene Expression Vol. 1: Environmental Stresses and Nutrients; and Vol. 2: Hormonal Signals (BR) 292
Shyu, A-B., see Chen, C-Y.A. 465
Simons, K., see Fiedler, K. (L) 177
Small, R., see Burns, J. 297
Sofia, H.J., see Rudd, K.E. (PSM) 12
Sokolik, C., Kinemages: make your own molecules for teaching 122
Songyang, Z. and Cantley, L.C., Recognition and specificity in protein tyrosine kinase-mediated signalling 470
Spring, K., see Lavin, M.F. 382
Stampf, D.R., see Peitsch, M.C. (CC) 82
Stansfield, I., Jones, K.M. and Tuite, M.F., The end in sight: terminating translation in eukaryotes 489
Stark, G.R., see Chernova, O.B. 431
Sternberg, M. and Bates, P.A., The Protein Folding Problem and Tertiary Structure Prediction (BR) 129
Stevens, T.H., see Cooper, A.A. 351
Stewart, A.F., see Aasland, R. (PSM) 56
Stubbs, M.T. and Bode, W., The clot thickens: clues provided by thrombin structure 23 (see also Erratum 131)
Sugino, A., Yeast DNA polymerases and their role at the replication fork 319
Sussman, J.L., see Peitsch, M.C. (CC) 82
Sutcliffe, J.G., pBR322 and the advent of rapid DNA sequencing (R) 87
Swindells, M.B., Identification of a common fold in the replication terminator protein suggests a possible mode for DNA binding (L) 300

T

Takai, Y., Sasaki, T., Tanaka, K. and Nakanishi, H., Rho as a regulator of the cytoskeleton 227
Takeda, J. and Kinoshita, T., GPI-anchor biosynthesis 367
Tamkun, J.W., see Peterson, C.L. 143
Tanaka, K., see Takai, Y. 227
Taylor, W.R., see Chernova, O.B. 431
Thevelein, J.M. and Hohmann, S., Trehalose synthase: guard to the gate of glycolysis in yeast? 3
Thomas, P.J., Qu, B-H. and Pedersen, P.L., Defective protein folding as a basis of human disease 456
Tinsley, J.M., see Blake, D.J. 133
Tobias, I., see Yang, Y. 313
Tollervey, D., see Morrissey, J.P. (L) 299
Tollervey, D., see Morrissey, J.P. 78
Toone, W.M., see Toyn, J.H. 70
Touhara, K., see Inglese, J. 151
Toyn, J.H., Toone, W.M., Morgan, B.A. and Johnston, L.H., The activation of DNA replication in yeast 70
Tsien, R.Y., see Cubitt, A.B. 448
Tsou, C-L., Chemical synthesis of crystalline bovine insulin: a reminiscence (R) 289
Tugendreich, S., see Lamb, J.R. 257
Tuite, M.F., see Stansfield, I. 489
Turner, A.J., see Hooper, N.M. (L) 15

U

Ui, M., Okada, T., Hazeki, K. and Hazeki, O., Wortmannin as a unique probe for an intracellular signalling protein, phosphoinositide3-kinase 303
Upton, C. and Buckley, J.T., A new family of lipolytic enzymes? (PSM) 178

V

van de Putte, P., DNA Repair and Mutagenesis (BR) 440
van der Geer, P. and Pawson, T., The PTB domain: a new protein module implicated in signal transduction (PSM) 277
van der Vies, S.M., see Koonin, E.V. (PSM) 14
Varfolomeev, E., see Feinstein, E. (L) 342
Varki, A.P., Neoglycoconjugates: Preparation and Applications (BR) 214
Volkin, E., What was the message? (R) 206
von Hippel, P.H., see Rippe, K. 500
Vorherr, T., see James, P. 38

W

Walberg, M.W., see Allen, J.B. 511
Walker, G.C., SOS-regulated proteins in translesion DNA synthesis and mutagenesis 416
Wallach, D., see Feinstein, E. (L) 342
Wang, J.H., see Lew, J. 33
Watters, D., see Lavin, M.F. 382
Weiss, A., see Howe, L.R. 59
Welch, G.R., Schrödinger's *What is Life?*: a 50-year Reflection (R) 45
Welch, G.R., T. H. Huxley and the 'Protoplasmic Theory of Life': 100 years later (R) 481
Wells, T.N.C., see Peitsch, M.C. (CC) 82
Westcott, T.P., see Yang, Y. 313
Westerhoff, H., see Burns, J. 297
Westerhoff, H.V., see Kholodenko, B.N. 52
Wilm, M., see Mann, M. 219
Winder, S.J., see Blake, D.J. 133
Witkowski, J., Blondes in Venetian Paintings, the Nine-banded Armadilllo, and Other Essays in Biochemistry (BR) 292
Witkowski, J., DNA in the Courtroom: A Trial Watcher's Guide (BR) 486
Witkowski, J.A., How I learned to stop worrying and love *Cell* (R) 163
Wolffe, A.P., see Landsman, D. (PSM) 225
Wollfe, A.P., DNA Structure and Function (BR) 330

Y

Yang, Y., Westcott, T.P., Pedersen, S.C., Tobias, I. and Olson, W.K., Effects of localized bending on DNA supercoiling 313
Ye, J-J., see Saier, M.H. (PSM) 267
Yen, T., Make your own DNA (Origami's answer to oligonucleotide synthesis) 94
Young, R.A., see Koleske, A.J. 113

Z

Zamble, D.B. and Lippard, S.J., Cisplatin and DNA repair in cancer chemotherapy 435

SUBJECT INDEX

Compiled by Mary Purton

Abbreviations: CC, Computer Corner; L, Letter to the Editor; O, Obituary; PSM, Protein Sequence Motif; R, Reflections

A

acrosome reaction 29
actin, association with EF1α 169
actin filaments, regulation by Rho 227
Ada protein 421
adenylate cyclase in plants 492
adenylate/uridylate-rich elements and mRNA degradation 465
aerobic metabolism, evolution 443
agarose gel electrophoresis at home (CC) 202
Akt/PKB, phosphoinositide 3-kinase target 441
alanyl-tRNA synthetases, evolutionary conservation 333
aminoacyl transfer RNA synthetases, editing reactions 1
amyloid β-peptide, defects in protein folding 458
amyloid precursor protein, cleavage by α-secretases (L) 15
annexin homologues (PSM) 177
antigen-recognition activation motif (ARAM) 59
antimicrobial polypeptides, membrane disruption 461
antimutator DNA polymerases 136
antisense snoRNAs 261
apoptosis
  ICE proteases 198
  induction by ceramide 73
  p53 and ATM 426
  and poly(ADP-ribose) polymerase (PARP) fragmentation 409
apurinic/apyrimidinic (AP)-sites 392
Arf proteins 147
Arl (Arf-like) proteins 147
Astbury, William Thomas (R) 126
ataxia–telangiectasia mutated (ATM) protein
  and DNA damage 426
  and phosphoinositide 3-kinase 382
AU-rich elements *see* adenylate/uridylate-rich elements
autonomously replicating sequence (ARS) elements 70
  silencing 232
autotrophic origin of life 337

B

bacteriophageT4 DNA polymerases, antimutator activity 136
BankIt (CC) 161
barrel-stave mechanism, membrane insertion of polypeptides 460
base excision repair pathway 391
Bayev, Alexander A. (O) 259
bindin 29
biochemistry, general (L) 16, 17, 224
BioLabs Midnight Hustler (R) 87, 163
bioluminescence, green fluorescent proteins 448
blue copper protein, evolution 444
boomerang DNA amplification (BDA) (CC) 372
brahma (brm) 145
BRG1, SWI2 homologue 145
Brighter Biochemistry (R) 163
bZIP proteins, and G-boxes 506

C

Ca^{2+}-dependent signalling pathways, role of calmodulin 38
E-cadherin, role in epithelial differentiation 307
calbindin D_{9k}, determination of cooperativity 495
calmodulin binding domains 38
calnexin, defective protein folding and human disease 456
cancer
  DNA mismatch repair defects 399
  modifying p53 protein structure 49
cancer research progressional model 302
'carpet-like' mechanism 462
carbon catabolism, regulation in bacteria 267
carbon fixation, reductive citric acid cycle 338
catenin 307
cdc2-like kinase, neuronal 33
cdk–cyclin complexes, role in activation of DNA replication 70
cdk5, activity in neuronal cells 33
Ced-3, apoptosis 198
cell adhesion
  during epithelial differentiation 307
  signal transmission in neutrophils 362
  sperm–egg interactions 29
cell cycle
  D-type cyclins 187
  maturation-promoting factor (R) 523
  see also cyclins, cdks, etc.
cell-cycle checkpoints
  abnormalities in ataxia–telangiectasia 382
  roles of p53 and ATM 426
ceramide 73
ceramide-activated protein phosphatase (CAPP) 76
chaperonins, bacterial and bacteriophage (PSM) 14
chromatin remodeling, role of SWI–SNF complex 143
chromatin-mediated transcriptional regulation and PHD domain (PSM) 56
chromosome condensation 357
cis-diamminedichloroplatinum(II) *see* cisplatin
cisplatin, and DNA repair in cancer chemotherapy 435
citric acid cycle, archaic, reductive 337
ClarisDraw (CC) 247
coactivators 517
coatomer, and Arf 148
Cockayne syndrome (CS), and nucleotide excision repair 402
cooperativity 495
CPP32, Ced-3 homologue 198
CR3, signal transmission in neutrophils 362
cyclic AMP
  in plants 492
  regulation of Raf1–ERK2 cascade 21
cyclic AMP phosphodiesterase in plants 492
cyclic AMP-dependent protein kinase (PKA)
  in plants 492
  regulation of Raf1–ERK2 cascade 18
  role in G2 arrest 526
cyclin–cdk complexes, role in activation of DNA replication 70
cyclin-dependent kinases *see* cdks
cyclins, D-type 187
cystic fibrosis, defects in protein folding 457
cytochrome *b*, evolution 444
cytochrome bc_1 complex, origin of core proteins 171
cytochrome *f* 217
cytochrome oxidases, evolution 444
cytokine receptors type II homology domain (PSM) 55
cytoskeleton
  association with EF1α 169
  and cdc2-like kinases 33
  regulation by Rho 227

D

Dali (CC) 478
daughter-strand gap repair 388
deadenylation and AU-rich elements 465
death domain (L) 342
desmosomes, formation in epithelial differentiation 311

development
epithelial differentiation in the mouse embryo 307
expression of cdk5 35
maturation-promoting factor (R) 523
DHR domains (PSM) 102, 265, 350
see also PDZ domain
DNA amplification methods (CC) 372
DNA bending
and supercoiling 313
and transcription activation 500
DNA damage, cellular responses 426
DNA glycolyases 391
DNA gyrase 159
DNA looping and transcription initiation 500
DNA methylation, role in mismatch repair 398
DNA photolyase 422
DNA polymerase β, and nucleotidyltransferase family (L) 345
DNA polymerase III, role in SOS mutagenesis 418
DNA polymerases
antimutators 136
fidelity in PCR (CC) 324
yeast 319
DNA repair 381
alternative DNA excision repair pathway 384
base excision repair pathway 391
crystallographic studies of DNA repair enzymes 421
double-strand break repair 412
homologous recombination 387
mismatch repair 397
MutY-dependent repair pathway 398
nucleotide excision repair and transcription 402
role of yeast DNA polymerases 320
very short patch repair pathway (VSP) 398
DNA replication, yeast 70, 319
DNA sequence assembly (CC) 162
DNA sequencing, advent of rapid methods (R) 87
DNA structure
discovery of double helical structure (R) 126
software for viewing (CC) 122, 285, 374
DNA topoisomerases 156
DNA-binding domains (PSM) 225
DNA-PK, involvement in DNA double-strand break repair and V(D)J recombination 412
doctoral theses online 175
double helix, discovery of structure (R) 126
double tagging assay 515
double-stranded-RNA-activated protein kinase *see* PKR
drug resistance to cisplatin 435
dystroglycans 133
dystrophin, coiled coils 133

E

egg receptor for sperm 29
electro-transformation (CC) 248
electrospray mass spectrometry 219
electrostatic switch, and membrane insertion of myristoylated proteins 272
elongation factor 1α (EF1α) 169
endonuclease activity of inteins 355
endonuclease III, role in DNA repair 394, 423
endonuclease IV, role in DNA base excision repair 395
endopeptidase-24.11 (L) 15
energy-transducing systems, evolution 443
enhancers 500, 517
epidermal growth factor receptor and PTB domains 277
epithelial differentiation 307
ERK2 kinase cascade 18
see also MAPK cascade
ERKs 117
ERM family 227
Ets DNA-binding domain (PSM) 225
eukaryote release factors (eRFs) 489
eukaryotic initiation factor 2 (eIF-2α) kinases 105, 241
evolution
aerobic metabolism 443
cytochrome bc_1 complex core proteins 171
protein structure comparisons (CC) 478
small nucleolar ribonucleoprotein particles (snoRNPs) (L) 298, 299
excision repair pathway, alternative 384
exonuclease III, role in DNA repair 395, 425
expressed sequence tags (ESTs) 295
exteins 351

F

Fanconi's anemia and cisplatin 435
FcγRII and III signal transmission in neutrophils 362
ferredoxins, evolution 444
fertilization, sperm–egg interactions 29
fibrillin, defects in protein folding 457
fibrinogen, interaction with thrombin 24
finite element analysis, DNA bending and supercoiling 313
fluorescent proteins, green 448
fork-head protein (L) 300
forkhead-associated (FHA) domain (L) 347
formamidopyrimidine DNA glycosylase 394
c-*fos*, mRNA stability 465
Fyn, T cell signalling 61

G

G proteins
and Arf 148
Gβγ and PH domains 151
palmitoylation of G_α subunits 181
G-box 506
G-protein-coupled receptors
palmitoylation 181
regulation of ERK2 18
role of Gβγ 151
wortmannin 303
GAL11 and transcriptional coactivators 518
gene amplification, link to DNA damage 431
gene expression
cytoplasmic mRNA–protein interactions 191
G-boxes 506
see also transcription and translation
α-giardins (L) 177
GLGF repeats (L) *see* PDZ domain
β-glucanases, circular permutations of protein sequence (L) 349
glucose sensing and metabolism 3
glycosylphosphatidylinositol (GPI) anchor biosynthesis 367
granulocyte–macrophage-colony-stimulating factor (GM-CSF), mRNA stability 465
green fluorescent proteins 448
and two-hybrid system 515
GTPase-activating proteins (GAPs) 148, 227
guanine exchange factors (GEFs) of Rho 227
Gulland, John Masson (R) 126

H

heat shock factor DNA-binding domains (PSM) 225
hedgehog, protein splice-junction motif (PSM) 141
heme ligands in cytochromes 217
heme-regulated eIF-2α kinase (HRI) 105
heparin, regulation of thrombin activity 24
hereditary nonpolyposis colon cancer (HNPCC) and DNA mismatch repair 399
hexokinase, inhibition by trehalose 6-phosphate 3
Hill reaction and cooperativity 495
hirudin 27
histidine-tagged fusion proteins (CC) 285
histones
binding to poly(ADP-ribose) polymerase (PARP) 409
histone H5 (L) 300
HMG-domain proteins, binding to cisplatin-modified DNA 438
HML, mating-type genes 231
HMR, mating-type genes 231
HOG1 (high-osmolarity glycerol response 1) 118
homologous recombination
DNA repair 387
role of RecA 109
HRI (heme-regulated eIF-2α kinase) 105
Hsp60, defective protein folding and human disease 456
Hsp70
defective protein folding and human disease 456
regulation of HRI 107
Hsp90, regulation of HRI 106
human genome project 295
Huxley, T.H. (R) 481
hybridization membranes, storage (CC) 160
HyperChem (CC) 285

I

I-κB, phosphorylation by PKR 244
ICH-1, Ced-3 homologue 198
immunoglobulin receptors, signal transmission in neutrophils 362
immunophilins *see* peptidyl-prolyl isomerases
inner cell mass, formation in the mouse embryo 307
inositol-lipid signalling (R) 326
insulin, chemical synthesis (R) 289
insulin receptor and PTB domains 279
integrin, signal transmission in neutrophils 362
inteins 351
interferon, induction of PKR 241
interferon receptor homology domain 2 (IRH2 domain) (PSM) 55
interleukin-1-β-converting enzyme (ICE) 198
interleukin 3, mRNA stability 465
intermediate filaments, role in desmosome formation 311
ion channel formation 460
ionizing radiation complementation group (IR) genes 412
iron–sulphur protein, evolution 444

J

JNK/SAPK family 117
c-*jun*, mRNA stability 465

K

Kacser, Henrick (O) 297
kanamycin nucleotidyltransferases (L) 345
kinemages (CC) 122
kinesin, homologous domain in AF-6 and cno (PSM) 265

L

β-lactamase gene sequencing (R) 87
leucine-responsive regulatory protein (Lrp) (PSM) 140
leukocyte response integrin 362
LexA 416
ligand binding, cooperativity 495
lipases, a new family (PSM) 177
lipocalins, prokaryotic (PSM) 498

M

MacDraw Pro (CC) 247
MAGE (CC) 122, 285
MALDI mass spectrometry 219
MAPK cascade
  and 14-3-3 proteins 95
  and $G_{\beta\gamma}$ 155
  parallel cascades 117
  see also ERK2 cascade
MAS20, MAS22, MAS37, MAS70, protein import 98
mass spectrometry, electrospray and MALDI 219
mating-type genes
  regulation by *HMR-E* 231
  silencing by transcriptional coactivators 520
  switching and recombination intermediates 387
maturation-promoting factor, the early days (R) 523
MCM proteins 70
medium-chain acyl-CoA dehydrogenase, defects in protein folding 458
Meister, Alton (O) 335
membrane proteins
  insertion of myristoylated proteins 272
  molecular interactions 460
  structural prediction using TMAP (CC) 204
membrane traffic, role of Arf 147
messenger RNA
  degradation and AU-rich elements 465
  discovery of the concept (R) 206
  interactions with proteins 191
  quantitative measurements (CC) 476
metabolic control analysis 52
metabolism, origins of 337, 443
metal chelate affinity chromatography (CC) 285
metal-binding sites, *de novo* protein design 280
mismatch repair 397
mitochondria
  evolution of cytochrome bc_1 complex core proteins 171
  protein import receptor 98
mitochondrial branched chain α-ketoacid dehydrogenase complex, defects in protein folding 458
mitochondrial processing peptidase (MPP), similarily to cytochrome bc_1 complex core proteins 171
mitosis chromosome condensation 357
molecular biology kits, changes (CC) 523
molecular chaperones
  14-3-3 proteins 97
  defective protein folding 456
  mitochondrial protein import receptor 98
  SecB 65
molten-globule state (R) 376
myosin, homologous domain in AF-6 and cno (PSM) 265
myosin light-chain kinase, calmodulin binding 38
myristoylated alanine-rich C kinase substrate (MARKS), membrane insertion 272
myristoylated proteins, membrane insertion 272

N

NADPH oxidase in neutrophils 362
Nedd2, Ced-3 homologue 198
nerve growth factor and PTB domains 277
neurofilaments, phosphorylation by cdk5 33
neuronal cdc2-like kinase 33
neutrophils, priming 362
NF-κB, activation by PKR 244
nicotinic acetylcholine receptor, ion channel formation 463
nitric oxide reductase, evolution 444
nitric oxide synthase, DHR domains (PSM) 102
nitrocellulose membranes, storage (CC) 160
nucleotide excision repair 402, 435
nucleotidyltransferases, three-dimensional structural similarities (L) 345

O

occludin 309
origin recognition complex (ORC) 70, 232
origins of replication, role in silencing gene expression 231

P

$p16^{INK4a}$, interaction with D-type cyclins 189
$p21^{Cip1}$, interaction with D-type cyclins 189
$p27^{Kip1}$, interaction with D-type cyclins 189
p38, MAPK 117
p53
  defects in protein folding 458
  regulation of genome stability 431
  role in cellular responses to DNA damage 426
  structure and function 49
palmitoylation, role in signal transduction 181
pardaxin 460
paroxysmal noctural haemoglobinuria (PNH) 367
parvulin (PSM) 12
pBR322, sequencing (R) 87
PCR *see* polymerase chain reaction
pdViewer (CC) 285
pdVwin (CC) 285
PDZ domain (L) 350
  see also DHR domain
peptide sequencing, by mass spectrometry 219
peptidyl-prolyl isomerases 12 (PSM), 456
PH (pleckstrin homology) domains
  in Akt/PKB 441
  and $G_{\beta\gamma}$ 151
phage display, and the two-hybrid system 511
PHD finger (PSM) 56
phosducin, $G_{\beta\gamma}$-binding domain 152
phosphatidylinositol (4,5) bisphosphate and Arf 148
phosphatidylinositol cycle (R) 326
phosphoinositide 3-kinase
  Akt/PKB as a target 441
  and ataxia–telangiectasia protein (ATM) 382, 429
  inhibition by wortmannin 303
  role in neutrophil activation 366
phosphorylation
  regulation of carbon metabolism in bacteria 267
  see also MAPK, protein tyrosine kinases, etc.
phosphotransferase system (PTS) 267
phosphotyrosine interaction domain (PID) *see* PTB domain
phosphotyrosine phosphatases, shared specificities with protein tyrosine kinases 473

phosphotyrosine-binding domain *see* PTB domain
Photoshop 3.0 (CC) 248
photosynthesis and evolution of aerobic metabolism 443
PI 3-kinase *see* phosphoinositide 3-kinase
pitrilysin, similarily to cytochrome bc_1 complex core proteins 171
PKB *see* Akt/PKB
PKR (double-stranded-RNA-dependent eIF-2α kinase) 105, 241
plakoglobin 311
plasma membrane Ca^{2+} pump, calmodulin binding 38
poly(ADP-ribose) glycohydrolase 405
poly(ADP-ribose) polymerase (PARP) 405
polyacrylamide gel plates, silanization (CC) 161
polymerase chain reaction (PRC)
  fidelity of DNA polymerases (CC) 324
  hot start PCR (CC) 42
  inverse PCR (CC) 372
  patent issues (CC) 324
  primer storage and loss of activity (CC) 42
  quantitative measurement of mRNA (CC) 476
  reamplification of fragments (CC) 124, 161
  reverse transcription PCR (CC) 476
  splinkerette PCR (CC) 372
  TA cloning (CC) 85, 161
  vectorette PCR (CC) 372
polyoma virus middle T antigen and PTB domains 278
pore formation 460
postreplicative repair (PRR) 388
PREKIN (CC) 122, 285
prICE 198
prion protein, defects in protein folding 458
promoters
  G-boxes 506
  interactions with distant activator proteins 500
Protein Data Bank-Browser (CC) 82
protein design, metal-binding sites 280
protein disulfide isomerase 456
protein export, role of SecB 65
protein folding
  defects and human disease 456
  molten globule (R) 376
protein kinase C
  regulation by 14-3-3 proteins 95
  regulation of Raf1–ERK2 cascade 20
protein sequence motifs, guidelines for submission 104
protein serine/threonine kinases, DNA-PK 413
protein splice-junction motif (PSM) 141
protein splicing 351
protein structure
  α-thrombin 23
  calmodulin-binding domains 38
  circular permutations (L) 179, 349
  cytochrome *f* 217
  Dali: a network tool for comparisons (CC) 478
  DNA repair enzymes 421
  dystrophin and related proteins 133
  membrane-protein structural prediction using TMAP (CC) 204
  membrane-spanning polypeptides 460
  p53 conformational flexibility 49
  RNP domain 235
  software for viewing biomolecules in three dimensions (CC) 122, 285, 374
  tetratrico peptide repeats (TPRs) 257
protein synthesis
  EF1α and compartmentalization 169
  regulation by heme-regulated eIF-2α kinase 105
protein tyrosine kinases
  recognition and specificity 470
  role in T-cell receptor signalling 59
protein–RNA interactions
  in eukaryotic gene expression 191
  RNP domain 235
proteins
  14-3-3 95
prothrombin, structure and activation 28
protoplasmic theory of life (R) 481
PTB (phosphotyrosine binding) domain 277, 471
pyrite formation, the first energy source for life? 338

R

Rab GTPases (PSM) 10
Rab3b 310
Rab13 310
Rac 227
  see also Akt/PKB
rad3, similarity to ATM protein 428
RAD52 group genes 388
Raf, interaction with 14-3-3 proteins 95
Raf-1 and Ras-medated signalling 18
Ras
  and Akt/PKB 442
  and $G_{\beta\gamma}$ 154
  membrane attatchment 274
  regulation of Ras-mediated signalling 18
RASMOL (CC) 374, 285
reactivating kinase (RK) 117
RecA
  role in DNA repair 387
  role in homologous recombination 109
  role in SOS mutagenesis 416
receptor tyrosine kinases
  probing signalling pathways with wortmannin 303
  role of $G_{\beta\gamma}$ in signalling 151
recombination
  homologous 387
  prevention by poly(ADP-ribose) polymerase (PARP) 409
repairosome 403
replication terminator protein (RTP) (L) 300
respiratory chains, evolution 443
retinoblastoma tumour-suppressor gene product (RB), interaction with D-type cyclins 188
retrodiction 338
Rho 227
ribonuclease MRP, role in pre-ribosomal RNA processing 78
ribonuclease P, role in pre-ribosomal RNA processing 78, (L) 298, (L) 299
ribonucleoprotein (RNP) domain 235
ribosomal RNA processing, role of small nucleolar RNAs 261
Rieske protein, evolution 444
RNA
  pre-ribosomal RNA processing 78, (L) 298, (L) 299
  RNA-dependent amino acid recognition 1
RNA chaperones, small nucleolar RNAs (snoRNAs) 261
RNA polymerase II 113, 517
RNA recognition motif (RRM) *see* ribonucleoprotein domain
RNA stability, and AU-rich elements 465
RNA synthesis, inhibition and role of p53 in regulating genome stability 431
RNA-binding proteins, structure 235
RNA–protein interactions, RNP domain 235

S

saposin, circularization of genes (PSM) 179, 349
Schizosaccharomyces pombe DNA endonuclease (SPDE) 384
Schrödinger, *What is Life?* (R) 45
SecB 65
α-secretase (L) 15
SEK 117
Sequencher 3.0 (CC) 162
serpins, regulation of thrombin activity 23
SH2 domains
  protein tyrosine kinase signalling 470
  and PTB domains 277
Shc, PTB domains 277
small nucleolar ribonucleoprotein particles (snoRNPs) 78, (L) 298, (L) 299
small nucleolar RNAs (snoRNAs) 261
SMC (structural maintenance of chromosome) family 357
SNF–SWI complex 143, 518
software upgrade blues (CC) 247
SOS mutagenesis 416
sperm receptor 29
sphingolipids, role in signal transuction 73
SRB (suppressor of RNA polymerase B) proteins 113
Src family of nonreceptor tyrosine kinases, palmitoylation 184
stop codons, translation termination 489
stress-activated protein kinases (SAPKs) 118
succinate dehydrogenase, evolution 444

SUG1 and transcriptional coactivators 518
sugar transport, regulation in Gram-positive bacteria 267
swaposins (PSM) 179, (L) 349
Swiss-3DImage collection (CC) 82
SWI–SNF complex 143, 518
SYBR Green I (CC) 523
Syk 61
syntrophin 133
DHR domains (PSM) 102

T
T-cell receptor signalling, role of kinases 59
T-vectors and cloning of PCR products (CC) 85, 161
T4 endonuclease V 422
TATA binding protein and coactivators 517
tau, phosphorylation by cdk5 33
TBP-associated factors (TAFs) and coactivators 517
termination, eukaryotic translation 489
tetratrico peptide repeats (TPRs) 257
thesis line 175
thrombin 23
tight junctions, formation in epithelial differentiation 309
TMAP (CC) 204
topoisomerase II, role in chromosome condensation 357
topoisomerases 156
transcription
activation by PKR 244
archaeal Lrp (PSM) 140
coactivators 517
link with nucleotide excision repair 402
SWI–SNF and chromatin remodeling 143
transcription factor TFIIH, link with nucleotide excision repair 402
transcription factors 113
transcription factors TFIIB and TFIID, and coactivators 517
transcription initiation 113, 500
transcription-coupled DNA repair 403
transfer RNA
operational RNA code for alanine in evolution 333
role in editing aminoacylation errors 1
transformations, contaminants (CC) 522
translation and mRNA degradation 465
translation initiation, mRNA–protein interactions 191
translation termination, eukaryotic 489
transthyretin, defects in protein folding 458
transvection and transcriptional coactivators 520
trehalose synthase, role in glucose-induced signalling 3
trichothiodystrophy (TTD), and nucleotide excision repair 402
trophectoderm, differentiation in the mouse embryo 307
tubulin, association with EF1 169
tumour suppressors, p53 49
two-hybrid system and phage display 511

U
U1A spliceosomal protein, RNP domain 235
umuC, umuD, role in SOS mutagenesis 416
upstream transcription activation sites 500, 517
uracil-DNA gycolyase 424
utrophin 133

V
V(D)J recombination, and DNA double-strand break repair 412
very short patch repair pathway (VSP) 398
viral fusion peptides 464
vitalism (R) 481
Vsr protein 398

W
Wächtershäuser, theory on the origins of metabolism 337
Word 6.0 (CC) 248
wortmannin 303
inhibition of neutrophil functions 366

X
XCAP-C, XCAP-E, role in chromosome condensation 357
xeroderma pigmentosum (XP)
and cisplatin 435
and nucleotide excision repair 402
XPA protein 402

Z
ZAP-70 59
zif268, mRNA stability 465
ZO-1, ZO-2 310

BOOKS REVIEWED

A

Abbott, C. and Povey, S., *Somatic Cell Hybrids* 331

Alberts, B., Bray., D., Lewis, J., Raff, M., Roberts, K. and Watson, J.D., *Molecular Biology of the Cell* (3rd edn) 210

Arkhipova, I.R., Lyubomirskaya, N.V. and Ilyin, Y.V., *Molecular Biology Intelligence Unit: Drosophila Retrotransposons* 487

B

Baeuerle, P.A., ed., *Inducible Gene Expression Vol. 1: Environmental Stresses and Nutrients; Vol. 2: Hormonal Signals* 292

Bloch, K., *Blondes in Venetian Paintings, the Nine-banded Armadillo, and Other Essays in Biochemistry* 292

Brown, T.A., *DNA Sequencing: the Basics* 250

C

Clore, G.M. and Gronenborn, A.M., eds, *NMR of Proteins* 168

Coleman, H. and Swenson E., *DNA in the Courtroom: A Trial Watcher's Guide* 486

Cooper, G.M., *Oncogenes* (2nd edn) 528

Cooper, N.G., ed., *The Human Genome Project: Deciphering the Blueprint of Heredity* 91

Crabb, J.W., ed., *Techniques in Protein Chemistry VI* 528

D

Dorman, C.J., *Genetics of Bacterial Virulence* 92

Dunn, B. and Pearl, L., eds, *Protein and Peptide Letters* (Journal) 215

E

Edwards, S.W., *Biochemistry and Physiology of the Neutrophil* 255

F

Fosket, D.E., *Plant Growth and Development: A Molecular Approach* 212

Friedberg, E.C., Walker, G. C. and Siede, W., *DNA Repair and Mutagenesis* 440

G

Garrett, R.H. and Grisham, C.M., *Biochemistry* 211

Goldstein, L.S.B. and Fyrberg, E.A., eds, *Drosophila melanogaster: Practical Uses in Cell and Molecular Biology* (Methods in Cell Biology Vol. 44) 252

H

Hesketh, R., *The Oncogene FactsBook* 486

Higgins, S.J., Turner, A.J. and Wood E.J., eds, *Biochemistry for the Medical Sciences: An Integrated Case Approach* 48

I

Ibelgaufts, H, ed., *Dictionary of Cytokines* 250

J

Jones, P., Qiu, J. and Rickwood, D., *RNA Isolation and Analysis* 251

K

Kellner, R., Lottspeich, F. and Meyer, H.E., *Microcharacterization of Proteins* 254

Kendrew, J., ed., *The Encyclopedia of Molecular Biology* 213

L

Lee, Y.C. and Lee, R.T., eds, *Neoglycoconjugates: Preparation and Applications* 214

Lucy, J.A., ed., *Molecular Membrane Biology* (Journal) 332

M

Merz, Jr, K.M., Le Grand, S.M. and Scott, M., eds, *The Protein Folding Problem and Tertiary Structure Prediction* 129

O

Op den Kamp, J.A.F., ed., *Biological Membranes: Structure, Biogenesis and Dynamics* 129

R

Rothblatt, J., Novick, P. and Stevens, T., eds, *Guidebook to the Secretory Pathway* 93

S

Sinden, R.R., *DNA Structure and Function* 330

Stryer, L., *Biochemistry* (4th edn) 488

V

Voet, D. and Voet, J.G., *Biochemistry* (2nd edn) 330

W

Watson, S. and Arkinstall, S., *The G-Protein Linked Receptor Facts Book* 91

Woodgett, J.R., ed., *Protein Kinases* 253

MAGAZINES & JOURNALS

from ELSEVIER TRENDS JOURNALS

Please send a FREE sample copy of/further information on:

- ☐ Immunology Today
- ☐ Immunology Today Online
- ☐ Molecular Medicine Today
- ☐ Parasitology Today
- ☐ Trends in Biochemical Sciences
- ☐ Trends in Biotechnology
- ☐ Trends in Cell Biology
- ☐ Trends in Ecology & Evolution
- ☐ Trends in Food Science & Technology
- ☐ Trends in Genetics
- ☐ Trends in Microbiology
- ☐ Trends in Neurosciences
- ☐ Trends in Pharmacological Sciences
- ☐ Trends in Polymer Science
- ☐ Drug Discovery Today
- ☐ Trends in Plant Science NEW

Also available

- ☐ Trends in Analytical Chemistry
- ☐ Trends in Endocrinology & Metabolism
- ☐ Trends in Cardiovascular Medicine

Name _____

Address _____

_____

_____ TA6 A02

Zip/Postcode _____ Country _____

Tel _____ Fax _____

☐ Please do not send me information from other organisations

Send, fax or 'phone your order to: **Americas:** Elsevier Trends Journals, 660 White Plains Rd, Tarrytown, NY 10591-5153, USA Tel: +1 (914) 524 9200 Fax: +1 (914) 333 2444
Europe/ROW: Elsevier Trends Journals, Oxford Fulfilment Centre, P.O. Box 800, Kidlington, Oxon, UK OX5 1DX Tel: +44 (0) 1865 843300 Fax: +44 (0) 1865 843940
Australia: Tel: +61 (02) 9958 4429 Fax: +61 (02) 9967 2126 **Japan:** Tel: +81 (3) 3836 0810 Fax: +81 (3) 3839 4344 E-mail enquiries: journals@elsevier.co.uk

ELSEVIER TRENDS JOURNALS